Atlantic Division
ROICC LAJES FIELD, AZORES

ROICC Report **MARCH 2003**

Project Summary:

Contract Number: N62470-00-D-0005
Task Order Number: 0017
Title and description: Emergency Construction Capability Contract (CONCAP) Worldwide - Emergency Repair to Breakwater, Lajes Field, Azores (A/F Project # TRZR 02-1019)

The scope of work includes emergency repairs to the breakwater that protects the POL pier facility at Lajes Field, Azores. Provide the maximum protection for repair of the breakwater within the funds available, completing as much work possible, before 30 Nov 02, which is considered the start of the major winter storms. Weather permitting, work might continue later than 30 Nov 02.

Award date: 09/30/2002.

% Complete: Base Bid Planned – 47%; Actual – 47%

This percentage is for the Temporary and Permanent repairs. The Temporary Repairs are 100% complete.

Award amount (Base Bid): $6,909,889.00

Current price (including change orders and options): $6,909,889.00

Projected total cost at completion (including all pending and potential modifications): $6,909,889.00

Original Contract Completion Date (CCD): 11/30/2002

Current CCD: 12/15/2002

Beneficial Occupancy Date (BOD): N/A.

This is the projected date of completion for the Interim repairs.

Change Order Rate (all) ($ value of all change orders / award price; expressed as %): 0.00%

COTAR: Mr. James Baldwin

Navy Technical Representative: ENS Carl E. Jackson, CEC, USNR

A/E of record: TranSystems Corporation.

CONCAP Contractor: Kellogg Brown & Root Services.

Design Assessment: (An assessment of design quality, on a scale of 1 (low) to 10 (high)) - 8

Contractor Performance: (An assessment of construction quality, on a scale of 1 (low) to 10 (high)) – 10

Contractor Performance: (An assessment of construction timeliness, on a scale of 1 (low) to 10 (high) – 10

Remarks:

A synopsis of significant project events and milestones follows:

Construction Photos

Core-Locs being cast in the lay-doown area

Core-Locs at the lay-down area

REMARKS:

JUNE 2002:

- On June 11, 2002 Mr. Jim Levick from LANTDIV wrote an e-mail to the 65th CES in order to inform the status of the design and the acquisition strategy recommended. He informed Maj. Mottley that the design alternatives were due the next day, and that the best way to accomplish the repairs was to use the CONCAP contract, due to the time constraints.
- On the same day Maj. Mottley wrote back an e-mail to Mr. Levick agreeing on the posture of using the CONCAP vehicle to accomplish the repairs; he also emphasized that the repairs should be initiated not later than July 02, 2002.
- On June 17, 2002 TranSystem Corporation sent to LANTDIV six (6) different alternatives for the repairs. These alternatives with their associated costs were generated in a period of less than 5 days.
- On June 18, 2002 LANTDIV sent the alternatives to the CONCAP contractor, Brown and Root Services, in order to coordinate the best plan of action.
- On June 18, 2002 Mr. Levick sent an e-mail informing that according to conversations with ACC they were ready to issue $ 2 million within that week. All additional funding required could only be issued after funding all other non-funded requirements. The funds were not issued as per previous conversations.
- On June 24, 2002 Mr. Levick informed via e-mail to ALCON of the plan of action to accomplish the wave study. He explained that this study would be accomplished in cooperation from Oceanor (in Norway) and Dr. Basco (ODU Wave Consultant) during the week of 7-12 Jul 02 in Cardiff Wales at the ICCE engineering conference. Dr. Basco would be attending this conference on behalf of ODU; the project would benefit from Dr. Basco's opportunity of having face time with the Norwegian consultant. Dr. Basco using also the Dutch firm Elsevier would provide the data from GEOSAT satellite on historically measured waves at Terceira.
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JULY 2002:

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- Due to the fact that no funding was still available from the Mayor Claimants (ACC and DLA) for the repairs, the 65th CES transferred approximately $ 50K to LANTDIV which served as "seed money' in order to issue a Task Order (# 0017) over the CONCAP contract with Brown and Root Services; these funds served to pay for the contractor site visit in order to assess the damage to the breakwater, and to find out different alternatives which could be accomplished in the already reduced time left to do the necessary work before the Winter storms.
- Brown and Root Services was issued Task Order 0017 on July 26, 2002 by LANTDIV to provide engineering services, including site visit, planning and estimating efforts for affecting an emergency repair to the breakwater.

AUGUST 2002:

- Brown and Root Services conducted a site visit to Terceira Island between 2 and 10 Aug 02 and developed, in coordination with LANTDIV, ROICC and the Designer of Record (TranSystems), a plan of action to execute the emergency repair during the fall of 2002, contingent upon receipt of necessary funding at the beginning of September. The breakwater site was inspected for extent of damage, and other information that could impact construction was collected. This information included historical weather data, site access, and work space availability, stockpiling areas, methods of construction, dockside unloading capability, mooring of work barges / tug boats / other floating equipment, and construction site office location.
- During their visit Brown and Root Services inspected other breakwater sites at Municipal Ports at Praia da Vitoria and Angra do Heroismo to determine the extent of damage and methods of repair used. Potential quarries, concrete plants and storage facilities were visited in order to review their capabilities and production capacities along with methods of product transportation. The team also investigated the different types of armor stones used on the island including determining available rock sizes, concrete forms, and local experience with the different stones.
- The team met with the contractors on the island to determine their experience, capabilities including access to materials and equipment, availability to perform the work within the time constraints, and to solicit their input on construction methods and materials.
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- **SEPTEMBER 2002:**
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- Funding was not received as planned and it was determined in mid-Sep that the project could not be constructed as originally designed by the target date of 30 November 2002.
- During their second visit, the representatives from Brown and Root met once again with the different construction Contractor companies capable of carrying out this type of work, and requested different quotes to these companies. Among all the companies, the Joint Venture Seth LDA/Ediçor was chosen as the one presenting the best value for the work. The prices presented by this Joint Venture were substantially below the rest of the offers presented by the other companies.
- On September 27, 2002 $ 5,742K were transferred to LANTDIV from ACC in order to award the Breakwater repair to the CONCAP contractor, Brown & Root Services. On the same day the funds were obligated.
- On the following day an additional $ 1,168K were received from DLA for this project. These funds were also obligated on the same day.
- Brown and Root Services (BRS) was issued Task Order 0017 Modifications 1 and 2 on 30 Sep 2002 by Atlantic Division, Naval Facilities Engineering Command (LANTDIV) to execute Emergency Repairs to Breakwater, Phase I, Lajes Field, Azores.
- Planning for the execution of repairs to the Lajes Field breakwater was continually challenged by the delay in funding; the project cannot be constructed as originally designed by the target date of 30 November 2002. However, in coordination with LANTDIV, the 65th CES, ROICC, the Designer of Record and Brown and Root Services, a plan has been developed to attempt emergency repairs this fall that offers an increased level of protection through the winter. The interim repair includes fortifying and reshaping the breakwater profile to a 2.5 to 1 slope using quarried stone, followed by installation of 20 TN Antifer Armor Cubes. Completion of the interim repair this fall is not guaranteed and will be entirely dependent on the weather. The plan of action will be adapted to the existing conditions in order to obtain the maximum protection to the pier facilities, in the shortest time and at the lowest cost to the

Government; all this will be performed with the coordination of the same organizations mentioned above.

- Subsequent to the interim repairs, the final repairs would be constructed the following spring and would be consistent with the original design. Weather permitting; work would start with removing the interim armor, excavating the toe and reshaping the profile to the final design slope, and installing permanent 30 TN Core-Loc Armor per the contract drawings.

OCTOBER 2002:

- Mobilization to the site and the actual work began on Monday 07 October 2002.
- On the same day, and through the coordination of Mr. Xavier (MTMC office), the contractor was authorized to backfill two holes that were made by the Praia City Hall on the hauling route.
- Thanks to the fast response and coordination among the USFORAZ J4 office, Mr. Xavier at the MTMC office and the ROICC office, the contractor was able to obtain the necessary authorizations and passes from HAAZ (Headquarters Azores Air Zone) for the workers and equipment inside the port facility; all this process took less that one day (normally takes more than one week).
- Hauling of quarry material for the road began on the following day. The construction of the access road was in full operation by the end of the first week. The road is being built using TOF quarry material, which is a combination of different gradations of rocks.
- The casting of the Antifer cubes started on the 14th of October. The production started with only 10 Antifer cubes per day, but soon after was increased to 16 per day.
- The crane was brought to the site on the 20th of October; it took 7 days to assemble it and additional 4 days to get it certified. Mr. James Homan from the ROICC office pointed out a few safety mechanisms in the crane that needed to be fixed, and were addressed immediately after.
- On October 24 the first D-Stones were brought to the site, in order to provide a support material for the construction of the road on the waterfront area (D-stones are the selected larger stones used on the base for the Antifer cubes and later for the Core-loc units). These rocks were placed using an Excavator.
- By the end of the month, the road had almost been completed. Also a total of 210 Antifer cubes had already been cast.
- The amount of materials from the quarry required at the site will exceed those quantities projected by an approximate of 20% (both TOF quarry run and D-Stones). Different alternatives are currently being considered in order to address this issue.

- **NOVEMBER 2002:**
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- The casting of the Antifer cubes was completed; a total of 415 Antifer cubes were cast.
- The placement of the Antifer cubes is still in progress.
- The construction of the access road has been completed.
- An alternate lifting device (pincers) is being employed to reduce the risk of failure of the lifting irons.

- The excavation of the toe was completed. Thanks to excellent weather, the contractor was able to use divers to assist on both the excavation and removal of material at the toe area and also the placement of Antifer Cubes.
- The placement of Antifer Cubes in all the underwater area has been completed.
- The amount of materials from the quarry required at the site will exceed those quantities projected by a quantity over 30% (both TOF quarry run and D-Stones).
- During the Final repairs on spring, the excavation of additional material at the toe area is expected to be sufficient for the additional material required on the final profile.
- In order to address the alternatives to reduce cost for the project and review the work progress, the ROICC office scheduled and held a conference call with Mr. Matt Gallagher and Mr. Carl Johnson (KBR), Mrs. Susan Bond (Seth LDA), ENS Erwin Rico (ROICC) at the ROICC office, and Mr. Scott Hayward (KBR), and Mr. Jan Eversen (TranSystem) over the telephone.
- Due to limited funding for the project, the options agreed by all parts as the best solution to reduce the cost are: Reduce one row of Antifer Cubes on the road, reduce the amount of D-stone to be used to protect the end of the road, and limit the production of Antifer Cubes to 415 units. The proposal of reducing one row of Antifer cubes at the toe was rejected; this would reduce the strength of the Breakwater.
- The toe excavation encountered fewer weather and wave impacts than were expected; this reduced the cost of this activity, leaving more funds for contingency of the Final repairs on spring.
- Mr. Jan Eversen will come to the Azores to present the results of the Wave Analysis; during his visit, he will also go to the Breakwater project to evaluate the progress and assist the contractor, and provide additional guidance.

DECEMBER 2002:

- Work was started clearing and preparing the casting and laydown area for the Core-Loc units, which are schedule to be cast in this area at the beginning of February 2003. The area to be used for the casting operation is a municipal lot, on which one of the subcontractors (Somage/Ediçor LDA) agreed with the Praia da Victoria City Council to clear and restore after the completion of the work. The area is located right across the entrance to the South Tank Farm, and was used in the past to cast the Tetrapods.
- All the remaining Antifer Cubes were brought to the site.
- The placement of the Antifer cubes was completed; the last 126 Antifer cubes were placed, including four used on STA 3+65 (additional work requested by the 65th CES).
- During a site visit by Col Giroux, LtCol Watkins Maj Ramage and Capt Palmer to the site, they pointed out a weak point in the Breakwater at STA 3+65, which is outside the Base Bid area. After discussing with KBR representatives on available funding, The ROICC directed them to proceed with the necessary repairs of this area, which included the placement of 264.2 tons of D stone and 4 Antifer cubes in STA 3+65.
- Both North and South transitions between the Base Bid area and the existing Tetrapod area of the breakwater were completed.
- Mr. Jan Eversen, from the A&E firm visited the site; during his visit he pointed out that the repairs were being done successfully; he also pointed out another weak point between STA 1+65 to STA 1+75. He suggested harvesting the Tetrapods that are on top at the beginning of the breakwater (STA 0+20 to STA 0+50) and use them in the weakened point. The ROICC office instructed the contractor to proceed with this additional work. A total of 20 Tetrapods were relocated and placed at STA 1+75.

- Mr. Birch and Mr. Dittmeier from the DOD Dependant School requested to the ROICC office to host a site visit for the 12th graders. After doing all the necessary coordination with the Port Authority and Host Nation authorities, the visit was allowed to take place. The young adults were briefed on safety at the site, the work being performed and the reasons for the repairs; they were provided with Hardhats and then toured to the site. The visit was very successful.
- The temporary repairs were completed on December 12, 2002; this portion of the project was concluded in 74 days after given the Notice To Proceed to the contractor (3 days ahead of schedule).
- This portion of the project was a complete success, fully meeting all the requirements. Through the very active participation from KBR, TranSystem, all the subcontractors, LANTDIV HQ and the ROICC office, and a true partnering among all parts, we were able to execute the work with multiple design revisions during the execution of the work, minimize the costs for the interim repairs and execute additional work needed.

JANUARY 2003:

- Work has been completed clearing and preparing the casting and laydown area for the Core-Loc units, which are schedule to be cast in this area at the beginning of February 2003. The area to be used for the casting operation is a municipal lot, on which one of the subcontractors (Somage/Ediçor LDA) agreed with the Praia da Victoria City Council to clear and restore after the completion of the work.
- Currently three sets of forms for the casting of the Core-Locs are on the site; the remaining three sets will arrive to the site on February.
- Currently the Core-Loc design is under revision by the Army Corps of Engineers, who were the developers of the system. Mr Jim Levick have asked the COE Vicksburg, recognized world wide as a breakwater specialist, to be involved in reviewing LANTDIV wave study and Final Concept Study; both prepared by TranSystems. Due to the magnitude of the breakwater and the extensive costly repairs needed, LANTDIV is seeking a "second pair of eyes" to fine-tune the final design to insure Base is getting best bang for the buck and we have adequately designed the breakwater.

FEBRUARY 2003:

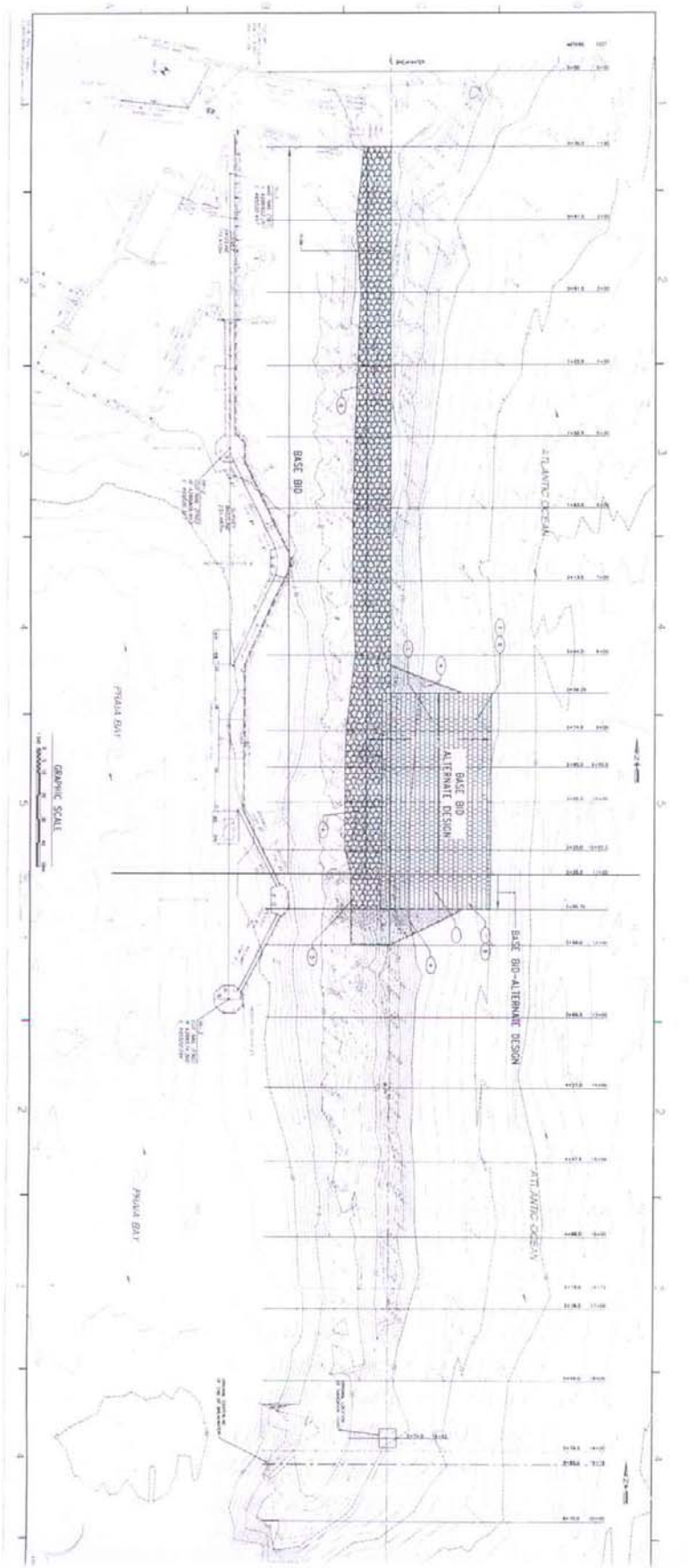
- Jim Levick, Ann Miller, representatives from LANTDIV, designer, and contractor met with the Base Civil Engineering(BCE) to discuss options for continuing the construction in the spring. Five options were presented to BCE , with one option being recommended. BCE concurred with the recommendation, with a few suggestions, and will formally decide on exactly how to proceed with construction during a visit scheduled for the week of 10March. Also, during these meetings, all parties agreed that a modeling study must be done before the breakwater is ultimately designed at a later date (not in the scope of this CONCAP contract). BCE and LANTDIV will make decisions on where exactly the money will come from for the physical modeling study.
- Casting of the Core-Loc units began on 12Feb, with the removal of the first forms on 13Feb. These Core-Locs are the largest ever cast, with the weight being around 34 tons each. Casting continues with about twenty completed Core-Locs. Currently there are 5 working molds on site but eventually, 12 molds will be on site to give a production capacity of 4 to 5 Core-Locs per day.
- No work is being done on the breakwater itself until the contract goes from being in the temporary design phase back to the construction phase. This issue will be taken care of in March.

MARCH 2003:

- Casting continues on the Core-Locs, with a production rate of approximately 24-25 units per week. At end of month, there are 99 Core-Loc units cast in the casting area.
- Another 250-Ton crane will be delivered to the jobsite in the first week of April to assist in the work on the breakwater.
- The contractor has submitted a construction plan for the spring start-up of the work that is to start in the first week of April, with placing of the first Core-Loc units in the second week of May.
- The contractor has started back with their weekly reports for this CONCAP project, anyone who is not receiving these reports who would like to, please contact the ROICC office

Site Plan for the project

(Not to scale).



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Rare view of Jim Levick actually working